IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Lynley F. Gumm

Serial No.: 10/796,815

Filed: March 8, 2004

For: SIMULTANEOUS ACLR MEASUREMENT

Examiner: Lewis G. West

Art Unit: 2618

Appeal Brief in Accordance With 37 C.F.R. § 41.37

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an appeal from the Examiner's rejection in the above-identified application dated January 23, 2008 finally rejecting claims 1-5, the only claims in the case.

Since the Notice of Appeal was received May 23, 2008, Appellant respectfully requests a one (1) month extension of time. Please charge any fee for the extension of time to Deposit Account 20-0352, along with the fee for submitting this Appeal Brief.

No additional fee is believed due. However, if an additional fee, including an additional extension of time fee, is due please charge that fee to Deposit Account 20-0352.

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Real Party in Interest

The real party in interest in this case is Appellant's assignee, Tektronix, Inc., an Oregon corporation, which is a subsidiary of Danaher Corporation, a Delaware Corporation.

Related Appeals and Interferences

There are no prior and pending appeals, interferences or judicial proceedings known to Appellant, Appellant's legal representative or assignee which may be related to, directly affect or have a bearing on the Board's decision in this appeal.

Status of Claims

Claims 1-5 stand finally rejected under 35 U.S.C. § 103 and are being appealed.

Status of Amendments

No amendments have been submitted by Appellants after the Examiner's final rejection.

Summary of Claimed Subject Matter

A summary of the claimed subject matter is provided, with reference to page numbers and line numbers. Numbers in bold provided in the following description refer to the item numbers identified in the figures.

The approach of the present invention allows the use of good, but not state-of-the-art, analog-to-digital converters (ADCs) to achieve accurate simultaneous adjacent channel leakage ratio (ACLR) measurement results by dividing the measurement tasks. A wideband, lower dynamic range channel is used to measure the amplitude of all five or more wideband wireless communication channels within a wideband communication signal, which needs only 40-50 dB of dynamic range for an accurate measurement. A second, narrower, wide dynamic range channel is used to measure the leakage power in an adjacent channel. The two measurements are made simultaneously so the instantaneous power of individual carriers is correlated with the leakage power. Two available ADCs are used to enable state-of-the-art, dynamic range measurements. (page 3, line 18 - page 4, line 5)

Specifically, as recited in claim 1 and shown in the only drawing Fig. 1, a down conversion system **12** receives a wideband signal, such as a wideband wireless communication signal encompassing multiple wireless channels, and provides a corresponding wideband output signal. The wideband output signal is input to a wideband channel **14** and to a narrow band channel **16**. (page 4, lines 6-10) The wideband channel provides a high speed (such as 400 Msamples/sec ADC), low resolution (such as 8-10 bits) data stream as an output (page 4, lines 11-15), while the narrow band channel provides a low speed (such as 25 Msamples/sec ADC), high resolution (such as 14-16 bits) data stream as an output (page 4, lines 15-18). A processor **DSP** receives the two output data streams to produce simultaneous ACLR measurements. (page 5, lines 7-9)

Claim 2 further recites that the narrow band channel has a tunable IF frequency converter **20, 28** that receives the wideband output signal and produces a narrow band output signal, and has a low speed, high resolution ADC **24** that provides the low speed, high resolution data stream from the narrow band output signal. (page 4, lines 10-11, 15-16, 21-23)

Claim 3 also recites that the wideband channel has an IF frequency converter **18, 26** that receives the wideband output signal and produces a converted wideband output signal, and has a high speed, low resolution ADC **22** (see also claim 5) that provides the high speed, low resolution data stream from the converted wideband output signal. (page 4, lines 11-15)

Finally claim 4 recites that the input to the tunable IF frequency converter of the narrow band channel may come, via switch **30**, from the converted wideband output signal of the wideband channel. (page 4, lines 18-21)

Grounds of Rejection to be Reviewed on Appeal

Whether claims 1-5 are unpatentable under 35 U.S.C. 103(a) in view of U.S. Patent Application Publication No. 2002/0127986 (White et al, hereinafter "White")?

Argument

35 U.S.C. 103(a) provides in pertinent part that "[A] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." As interpreted by the U.S. Supreme Court in *Graham v. John Deere of Kansas City*, 383 U.S. 1, 17-18 (1966) certain issues of fact need to be determined to resolve the issue of obviousness: (i) the scope and content of the prior art; (ii) the differences between the claimed invention and the prior art; and (iii) the level of ordinary skill in the prior art.

More recently in *KSR International Co. v. Teleflex Inc. et al* (2007) the U.S. Supreme Court stated that a rigid "teaching, suggestion or motivation" (TSM) test, as applied by the Federal Circuit Court of Appeals, is inconsistent with 35 U.S.C. 103(a) obviousness determination as not being expansive and flexible as provided by *Graham*, although providing a helpful insight. The Court stated that where there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product, not of innovation, but of ordinary skill and common sense.

Typically a rejection under 35 U.S.C. 103 requires the combination of references, each of which provides one or more elements, that when combined in a reasonable, common sense manner, produce the invention as claimed. However in the present case the Examiner has applied merely a single reference – White. The Examiner has rejected claims 1-5 under 35 U.S.C. 103(a) as being unpatentable solely under White.

White discloses a power amplifier system that locates and suppresses inter-modulation distortion (IMD). The need addressed is a tunable receiver having a dynamic range sufficient to identify and eliminate IMD products from RF signals. White shows an input signal 100 input to a main signal path 102 and a feed-forward signal path 104 that includes a carrier correction loop (CCL) 106 between the two paths, an error correction loop (ECL) 108 between the two paths and a tunable receiver loop 110. Each main and feed-forward path includes an attenuator 134, 120, a phase shifter 136, 122, a delay filter 140, 118 and an amplifier 138, 124. After cancellation of the carrier signals by the CCL, substantially only IMD products remain on the feed-forward path. Then the ECL essentially subtracts the IMD products from the main path so that the output signal 112 is substantially free of IMD products. The resulting signal is input (200) to a tunable receiver 144 that has a downconverter using a frequency synthesizer 202, a mixer 204, an IF filter 220 and an ADC 230. The data stream from the ADC is input to a DSP 250 which transforms the digitized baseband signals to a frequency domain representation for spectral analysis – identifies the frequency components and power level at each frequency.

The Examiner states that White discloses a system for simultaneous ACLR measurements. However White does not even discuss ACLR measurements, but rather only deals with IMD suppression in an RF signal prior to input to a tunable receiver to produce a spectral analysis of the input signal.

The Examiner states that White discloses a down converter for receiving a wideband signal input and providing a corresponding wideband signal output. However White receives a corrected RF signal input at the tunable receiver down converter and provides a digitized baseband signal as an output, not a corresponding wideband signal.

The Examiner states that White has both a wideband channel having the corresponding wideband signal as an input and providing a high speed, low resolution

data stream as an output and a narrow band channel having the corresponding wideband signal as an input and providing a low speed, high resolution data stream as an output. However White has no down converter prior to the separation into main and feed-forward paths, and both paths have the same bandwidth so there is not a wideband path and a narrow band path, and there is no ADC in either path so there are not two different speed, resolution outputs. In fact White only has a single output 112 and the only ADC is in the tunable receiver after down conversion to baseband where there is only a single signal path.

Finally The Examiner states that White has means for processing to produce simultaneous ACLR measurements. However White processes the data from the tunable receiver to produce a frequency spectrum for spectral analysis. Therefore White does not disclose or suggest any of the elements recited in claim 1.

Therefore, regardless of the standard used to determine obviousness, none of the *Graham* factual criteria are met. There is nothing in White that addresses the problem addressed by the currently claimed invention, and there are no finite number of identified, predictable solutions for the current problem discussed in White. Thus a person of ordinary skill in the art using common sense would not be able to deduce the presently claimed invention from White.

Conclusion

For all these reasons, the rejections of claims 1-5 should be reversed as the claims relate to patentable inventions that are not rendered obvious by White. Accordingly, Appellant respectfully requests that the rejection of claims 1-5 be reversed and that this case be passed to issue.

Respectfully submitted,

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CLAIMS APPENDIX

1. A system for simultaneous ACLR measurements comprising:

a down conversion system for receiving a wideband signal as an input and providing a corresponding wideband signal as an output;

a wideband channel having the corresponding wideband signal as an input and providing a high speed, low resolution data stream as an output;

a narrow band channel having the corresponding wideband signal as an input and providing a low speed, high resolution data stream as an output; and

means for processing the respective data streams to produce the simultaneous ACLR measurements.

2. The system as recited in claim 1 wherein the narrow band channel comprises:

a tunable IF frequency converter having the corresponding wideband signal as an input and providing a narrow band signal as an output; and

a low speed, high resolution ADC having the narrow band signal as an input and providing the low speed, high resolution data stream as an output.

3. The system as recited in claims 1 or 2 wherein the wideband channel comprises:

an IF frequency converter having the corresponding wideband signal as an input and providing a converted wideband signal as an output; and

a high speed, low resolution ADC having the converted wideband signal as an input and providing the high speed, low resolution data stream as an output.

4. The system as recited in claim 3 wherein the corresponding wideband signal input to the tunable IF frequency converter comprises the converted wideband signal.

5. The system as recited in claims 1 or 2 wherein the wideband channel comprises a high speed, low resolution ADC having the corresponding wideband signal as an input and providing the high speed, low resolution data stream as an output.

EVIDENCE APPENDIX

No evidence has been submitted pursuant to Sections 1.130, 1.131 or 1.132 or by the Examiner that is relied upon by the Appellant in this appeal.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings related to this appeal.